Katherine Vazquez

Annotations 11.1.2011

Ma, Jasmine; Singer-Gabella, M. (2011). Learning to Teach in the Figured World of Reform

Mathematics: Negotiating New Models of Identity. *Journal of Teacher Education* v. 62, p. 8-22.

Starting from the assertion that traditional and reform mathematics pedagogy constitute two distinct figured worlds of teaching and learning, the authors explore the initiation of prospective teachers into the figured world of reform mathematics pedagogy. To become successful teachers in reform-oriented classrooms, prospective teachers must learn more than pedagogical tools and moves: They must understand what it is to participate in the figured world of reform pedagogy, develop models of identities for participants in this world, and negotiate new constructions of mathematics. In this article the authors present three episodes from an elementary mathematics teacher education class where positions of “teacher” and “child” were offered by instructors in activities designed to approximate practice in the reform figured world. Students negotiated new models of identity and conceptions of mathematics as they took up these positions in varying ways.

Star, Jon; Smith, J.; Jansen, A. (2008). What Students Notice as Different Between

Reform and Traditional Mathematics Programs. *Journal for Research in Mathematics Education,* v. 39, p. 9-32.

Research on the impact of *Standards-based* mathematics and reform calculus curricula has largely focused on changes in achievement and attitudes, generally ignoring how students experience these new programs. This study was designed to address that deficit. As part of a larger effort to characterize students' transitions into and out of reform programs, we analyzed how 93 high school and college students perceived *Standards-based* and reform calculus programs as different from traditional ones. Results show considerable diversity across and even within sites. Nearly all students reported differences, but high-impact differences, like *Content*, were not always related to curriculum type (reform or traditional). Students' perceptions aligned moderately well with those of reform curriculum authors, e.g., concerning *Typical Problems*. These results show that students' responses to reform programs can be quite diverse and only partially aligned with adults' views. Reprinted by permission of the publisher.

Herrera, Terese; [Owens, D.](javascript:%20void%200%20) (2001). The “New New Math”?: Two Reform Movements in

Mathematics Education. *Theory into Practice,* v. 40, p. 84-92.

Part of a special issue on mathematics education in the context of reform. The new math and standards-based reform movements in mathematics education shared some similarities and yet differed substantially. The new math of the 1960s and the standards-based movement, launched in 1989, added new content to the K–12 curriculum, both being prompted by discontent with student performance and the incompatibility of traditional content with advances in mathematics. In addition, both reforms received general public acceptance at first and encountered strong countermovements toward traditional instruction. However, new math focused on deductive reasoning, set theory, rigorous proof, and abstraction, whereas the standards-based movement put the emphasis on real-world applications. Moreover, standards-based pedagogy was based on constructivism and thus featured instructional practices that focused strongly on process.

[Carroll, William M.](javascript:%20void%200%20) (1997). Results of Third-Grade Students in a Reform Curriculum on the

Illinois Sate Mathematics Test. *Journal for Research in Mathematics Education*, v. 28 p. 237-42.

A study examined the test scores of third-grade students using a reform curriculum on the mathematics portion of the Illinois Goal Assessment Program. Students in 14 of the 26 schools participating in the study had been using the University of Chicago School Mathematics Project (UCSMP) since kindergarten, and students in the other 12 schools had adopted it during the 1992–1993 or 1991–1992 school year. Results revealed that the mathematical understanding gained by students who explored and actively constructed their knowledge does transfer to more traditional measures, that only 2 percent of UCSMP students failed to meet state goals, that UCSMP students scored well in all mathematical areas, and that students who had been using the UCSMP since kindergarten scored higher and showed stronger gains than students who had only been in the curriculum for a year or two.

[Cai, Jinfa](javascript:%20void%200%20); Wang, N; Moyer, J.; Wang, C.; Nie, B. (2011). Longitudinal investigation of the

curricular effect: An analysis of student learning outcomes from the LieCal Project in the United States. *International Journal of Educational Research,* v. 50, p. 117-36

In this article, we present the results from a longitudinal examination of the impact of a Standards-based or reform mathematics curriculum (called CMP) and traditional mathematics curricula (called non-CMP) on students' learning of algebra using various outcome measures. Findings include the following: (1) students did not sacrifice basic mathematical skills if they are taught using a Standards-based or reform mathematics curriculum like CMP; (2) African American students experienced greater gain in symbol manipulation when they used a traditional curriculum; (3) the use of either the CMP or a non-CMP curriculum improved the mathematics achievement of all students, including students of color; (4) the use of CMP contributed to significantly higher problem-solving growth for all ethnic groups; and (5) a high level of conceptual emphasis in a classroom improved the students' ability to represent problem situations. (However, the level of conceptual emphasis bears no relation to students' problem solving or symbol manipulation skills.).